

## **ABSTRACT**

The invention describes the finding that 4-(4-dimethylaminostyryl)-N-methylpyridinium or ASP<sup>+</sup> is a fluorescent substrate that is transported by several neurotransmitter transporters. Provided are methods for the analysis of neurotransmitter transport and binding using ASP<sup>+</sup>. The invention also provides rapid methods for screening for modulators of neurotransmitter transport. As neurotransmitter transporter defects are associated with numerous neurological disorders, the invention also provides methods for treating neurotransmitter transport-associated defects/conditions using the modulators identified by the screening methods of the invention.